

# Mineral Industry Surveys

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## VANADIUM IN MAY 1999

According to *Metal Bulletin*, U.S. ferrovanadium prices during May ranged from \$5.10 to \$5.30 per pound vanadium content, compared with \$5.15 to \$5.55 in April. The range for European ferrovanadium prices was \$10.30 to \$10.90 per kilogram in May.

In April, European ferrovanadium prices ranged from \$10.50 to \$11.80. For vanadium pentoxide, the May range as published by *Metal Bulletin* was \$1.93 to \$2.08 per pound, while in April it was \$1.90 to \$2.20.

TABLE 1  
U.S. CONSUMPTION AND CONSUMER STOCKS OF VANADIUM, BY FORM 1/

(Kilograms, contained vanadium)

	1998 p/		1999			
	Consumption	Stocks	April		May	
			Consumption	Stocks	Consumption	Stocks
Ferrovandium 2/	3,710,000	317,000	305,000	338,000	NA	NA
Vanadium-aluminum alloy	W	13,600	W	14,600	NA	NA
Other 3/	506,000	10,200	41,600	10,900	NA	NA
Total	4,220,000	341,000	347,000	364,000	NA	NA

p/ Preliminary. NA Not available. W Withheld to avoid disclosing company proprietary data; included with "Other."

1/ Data are rounded to three significant digits; may not add to totals shown.

2/ Includes other vanadium-iron-carbon alloys as well as vanadium oxides added directly to steel.

3/ Includes other vanadium alloys, vanadium metal, vanadium pentoxide, vanadates, chlorides, other specialty chemicals, and items indicated by symbol "W."

TABLE 2  
U.S. CONSUMPTION OF VANADIUM, BY END USE 1/

(Kilograms, contained vanadium)

	1998 p/	1999		
		April	May	Year to date
Steel:				
Carbon	1,420,000	85,200	NA	NA
High-strength low-alloy	1,020,000	83,700	NA	NA
Stainless and heat-resisting	42,500	6,900	NA	NA
Full alloy	930,000	103,000	NA	NA
Tool	263,000	26,400	NA	NA
Total steel	3,670,000	305,000	NA	NA
Superalloys	20,900	1,340	NA	NA
Miscellaneous and unspecified 2/	526,000	41,000	NA	NA
Total consumption	4,220,000	347,000	NA	NA

p/ Preliminary. NA Not available.

1/ Data are rounded to three significant digits; may not add to totals shown.

2/ Includes cast irons, alloys excluding steel and superalloys, chemical and ceramic uses, and other miscellaneous and unspecified uses.

TABLE 3  
U. S. IMPORTS AND EXPORTS OF ALUMINUM-VANADIUM MASTER ALLOY AND  
VANADIUM METAL, INCLUDING WASTE AND SCRAP 1/

(Kilograms, gross weight)

	Aluminum-vanadium master alloy		Vanadium metal, including waste and scrap	
	Quantity	Value	Quantity	Value
Imports for consumption:				
1998	298,000	\$496,000	12,200	\$491,000
1999:				
February	--	--	7,350	120,000
March	--	--	68	47,000
April:				
China	--	--	8,000	71,400
Germany	--	--	487	29,000
Russia	--	--	1,500	86,900
Total	--	--	9,990	187,000
Year to date	--	--	17,400	365,000
Exports:				
1998	856,000	11,500,000	346,000	7,160,000
1999:				
February	8,280	108,000	38,400	650,000
March	44,600	581,000	28,800	490,000
April:				
Austria	--	--	2	19,800
Finland	--	--	2	3,500
France	2,450	31,900	--	--
Germany	--	--	12	15,200
Japan	934	18,200	--	--
Mexico	84,800	1,100,000	--	--
Total	88,200	1,150,000	16	38,500
Year to date	148,000	1,950,000	68,700	1,290,000

1/ Data are rounded to three significant digits; may not add to totals shown.

Source: Bureau of the Census

TABLE 4  
U. S. IMPORTS AND EXPORTS OF FERROVANADIUM, VANADIUM PENTOXIDE (ANHYDRIDE) AND  
OTHER OXIDES AND HYDROXIDES OF VANADIUM 1/

(Kilograms, contained vanadium)

	Ferrovanadium		Vanadium pentoxide (anhydride) 2/		Other oxides and hydroxides of vanadium	
	Quantity	Value	Quantity	Value	Quantity	Value
Imports for consumption:						
1998	1,620,000	\$39,300,000	847,000	\$12,300,000	33,000	\$574,000
1999:						
February	76,500	1,020,000	--	--	--	--
March	59,200	753,000	--	--	--	--
April:						
Austria	29,200	337,000	--	--	--	--
Canada	55,400	538,000	814	13,500	--	--
China	47,800	521,000	--	--	--	--
Czech Republic	16000	172000	--	--	--	--
South Africa	7160	93200	--	--	--	--
Total	156,000	1,660,000	814	13,500	--	--
Year to date	418,000	5,650,000	28,400	352,000	--	--
Exports:						
1998	579,000	13,700,000	681,000	6,850,000	232,000	2,830,000
1999:						
February	34,800	573,000	48,700	293,000	9,150	78,300
March	24,900	365,000	61,000	415,000	3,130	35,400

See footnotes at end of table.

TABLE 4--Continued  
U. S. IMPORTS AND EXPORTS OF FERROVANADIUM, VANADIUM PENTOXIDE (ANHYDRIDE) AND  
OTHER OXIDES AND HYDROXIDES OF VANADIUM 1/

(Kilograms, contained vanadium)

	Ferrovanadium		Vanadium pentoxide (anhydride) 2/		Other oxides and hydroxides of vanadium	
	Quantity	Value	Quantity	Value	Quantity	Value
Exports--Continued:						
1999--Continued:						
April:						
Austria	--	--	--	--	4,050	51,500
Belgium	--	--	24,600	132,000	--	--
Canada	23,300	326,000	--	--	--	--
Germany	--	--	13,700	60,000	--	--
Japan	--	--	--	--	1,600	14,200
Mexico	1,650	30,800	--	--	--	--
New Zealand	--	--	383	5,390	--	--
Pakistan	--	--	3,870	47,800	--	--
Total	24,900	356,000	42,600	245,000	5,650	65,700
Year to date	123,000	1,850,000	246,000	2,230,000	22,600	228,000

1/ Data are rounded to three significant digits; may not add to totals shown.

2/ May include catalysts containing vanadium pentoxide.

Source: Bureau of the Census

TABLE 5  
U. S. IMPORTS FOR CONSUMPTION OF VANADIUM-BEARING ASH, SLAG 1/

(Kilograms, contained vanadium pentoxide)

	Ash and residues		Ash and residues (not from the manufacture of iron and steel)		Slag, from the manufacture of iron and steel	
	Quantity	Value	Quantity	Value	Quantity	Value
Imports for consumption:						
1998	3,030,000	\$9,960,000	2,280,000	\$1,710,000	1,250,000	\$10,500,000
1999:						
February	202,000	340,000	64,600	74,000	--	--
March	229,000	1,090,000	154,000	93,600	279,000	558,000
April:						
Canada	39,800	35,600	202,000	115,000	--	--
Hungary	43,900	41,500	--	--	--	--
Mexico	119,000	690,000	--	--	--	--
United Kingdom	89,600	175,000	--	--	--	--
Total	292,000	942,000	202,000	115,000	--	--
Year to date	809,000	2,840,000	643,000	351,000	279,000	559,000

1/ Data are rounded to three significant digits; may not add to totals shown.

Source: Bureau of the Census.

TABLE 6  
U. S. IMPORTS FOR CONSUMPTION OF MISCELLANEOUS VANADIUM CHEMICALS 1/

(Kilograms, contained vanadium)

	Sulfates		Vanadates	
	Quantity	Value	Quantity	Value
Imports for consumption:				
1998	350	\$19,300	129,000	\$1,410,000
1999:				
February	--	--	11,600	119,000
March	--	--	16,400	143,000
April:				
Germany	--	--	626	23,500
Japan	--	--	4	12,600
Total	--	--	630	36,100
Year to date	--	--	40,700	426,000

1/ Data are rounded to three significant digits; may not add to totals shown.

Source: Bureau of the Census